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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/957,032	09/21/2001	Masayoshi Shimizu	826.1751	4255

21171 7590 08/09/2006	EXAMINER
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005	EDWARDS, PATRICK L

ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 08/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/957,032	SHIMIZU, MASAYOSHI
	Examiner	Art Unit
	Patrick L. Edwards	2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>01 June 2006</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1,14,15,17-19 and 32-36</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1,14,15,17-19 and 32-36</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   The response received on 01 June 2006 has been placed in the file and was considered by the examiner. An action on the merits follows.

Response to Arguments

2.   The arguments filed on 01 June 2006 have been fully considered. A response to these arguments is provided below.

Prior Art Rejections

Arguments and Replies:

(a) Applicant alleges that Winkelman does not teach the "tone level" feature of independent claim 1.

response:

Applicant's arguments have been fully considered but are unpersuasive. The claim merely requires the computation of a statistic amount "for estimation of the tone color value level" of an image. In other words, the claim simply requires that a statistic amount be computed using the characteristic amount. The statistic amount must also be able to be used for estimation of a tone color value.

Winkelman discloses computing a characteristic amount (i.e. the mean value of the sub image), and using this characteristic amount to compute a statistic amount (i.e. the standard deviation). This standard deviation is used to create an aggregate histogram that corresponds to the frequency distribution of image values of color images. A frequency distribution of image values in a color image qualifies as an "estimate of the tone color value level" because it is an evaluation of the values of the image pixels.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4.   Claims 1, 14, 17, 32-33, 35, and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Winkelman (USPN 5,748,802).

Regarding Independent Claims 1 and 32:

Winkelman discloses the following limitations:

- **dividing an image into a plurality of character areas** (col. 3 lines 12-13: The sub-images disclosed in Winkelman are analogous to character areas recited in the claim because each sub-image has a characteristic property that defines the nature of the sub-image.).

- **computing a characteristic amount for each of the plurality of sub-areas [producing characteristic amounts]** (col. 11 lines 15-23: Per the applicant's specification (see paragraph 88 et al), the mean value of a sub-image as disclosed in Winkelman qualifies as the "characteristic amount" recited in the claim).

- **computing a statistic amount [for estimation of the tone color value level of an original] using the characteristic amount** (col. 11 lines 25-38: Per the applicant's specification (see, *inter alia,* paragraph [0089]), the standard deviation (or scatter) disclosed in Winkelman qualifies as the "statistic amount" recited in the claim. Winkelman further discloses that the computed standard deviation is used in the estimation of the tone level of the image (col. 12 line 45 – col. 13 line 5: The reference describes how the standard deviation is used to help calculate histograms—which are tone level estimates.).).

Regarding claim 32, a computer readable recording medium that stores a program which causes the computer to execute the steps of claim 1 is essential if the image processing method disclosed in Winkelman is to function. The computer readable medium is therefore inherent in the Winkelman disclosure.

Regarding Claims 14, 17, 33, and 35:

Regarding claims 14 and 35, Winkelman further discloses comparing the computed statistic amount with a predetermined value (col. 12 lines 45-62: The scatter threshold SwsDev disclosed in Winkelman is analogous to the predetermined value recited in the claim.).

Winkelman further discloses determining a correcting parameter based on the comparison result (col. 13 lines 1-41). The results of the above comparison determine which sub-image histograms are utilized in the calculation of the aggregate histogram. The aggregate histogram is employed in the calculation of the correction curve (col. 13 lines 39-41). Therefore, this aggregate histogram qualifies as the claimed correcting parameter and we can consequently conclude that the determination of a correcting parameter is based on the aforesaid comparison.

Winkelman further discloses using this corrected parameter to correct the original image (col. 15 lines 7-14).

Regarding claim 17, Winkelman discloses an apparatus for performing the method of claim 14 (see winkelman figure 1).

Regarding claim 33, a computer-readable recording medium that stores a program which causes the computer to execute the steps of claim 14 is essential if the image processing method disclosed in Winkelman is to function. Therefore, a computer-readable recording medium is inherent in the Winkelman disclosure.

Regarding New Claim 36:

All of the limitations have been discussed above.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Winkelman as applied to claim 17 above, and further in view of Kinjo et al. (USPN 6,631,208). The arguments as to the relevance of Winkelaman as applied above are incorporated herein.

With regard to claim 18, Winkelman discloses that the statistic amount is computed based on the characteristic amount, but fails to expressly disclose that this computation also involves a weight coefficienet which corresponds to each area.

Kinjo, however, discloses calculating a statistic amount using both a characteristic amount (Kinjo col. 17 line 60 – col. 18 line 3) and a weight coefficient (Kinjo col. 17 lines 42-46) corresponding to each image area. The fourth mark disclosed in Kinjo is analogous to the "characteristic amount" recited in the claim. Further, the "fifth mark" disclosed in Kinjo is analogous to the weight coefficient recited in the claim.

Kinjo further discloses determining an average value of two marks (Kinjo col. 18 lines 20-44). This average value is analogous to the claimed "statistic amount".

It would have been obvious to one reasonably skilled in the art at the time of the invention to modify Winkelman's image status estimation method by using both a characteristic amount and a weight coefficient as taught by Kinjo. Such a modification would have allowed for a method which had additional criteria for determining discoloration regions of an image (Kinjo col. 18 lines 14-20).

6.   Claims 15, 19, and 34 rejected under 35 U.S.C. 103(a) as being unpatentable over Winkelman as applied above, and further in view of Katajamaki et al. ("Image Dependent Gamma Selection Based on Color Palette Equalization and a Simple Lightness Model"). The arguments as to the relevance of Winkelman as applied above are incorporated herein.

With regard to claim 15, Winkelman discloses using a correcting parameter to generate a corrected image. Winkelman further discloses determining a correcting parameter by comparing a computed statistic amount with a predetermined value. Winkelman fails to expressly disclose correcting the original image using a plurality of

different correcting parameters to generate a plurality of corrected images. It follows that Winkelman also fails to expressly disclose determining that the correction result is the corrected image obtained using the correcting parameter corresponding to the statistic amount closest to a predetermined value.

Katajamaki, on the other hand, discloses generating a plurality of corrected images by correcting an original image using a plurality of different correcting parameters (Katajamaki pg. 303: The reference describes using different values of a variable 'f' (i.e. a plurality of different correcting parameters) to generate a plurality of corrected images from an original image).

Katajamaki further discloses defining a corrected image obtained using a correcting parameter (in this case the optimal value (or correcting parameter) was 12) corresponding to a statistic amount closest to a predetermined value among the computed statistic amounts as an appropriate corrected image (Katajamaki pg. 303: again, the reference desribes determing the parameter which produces the optimum result (i.e. defining a corrected image) by minimizing a root mean square error value (i.e. the computed statistic amount which was closest to a predetermined value for the statistic amount).).

It would have been obvious to one reasonably skilled in the art at the time of the invention to modify Winkelman's image correcting method by generating a plural corrected images from plural correcting parameters and then determining the appropriate parameter and corresponding image by minimizing some predetermined error index as taught by Katajami. Such a modification would have allowed for an iterative image correction algorithm well suited for computer processing. It also would have allowed for the option of using a reference image in the image correction process as an ideal image with which corrected images could be compared to.

With regard to claim 19, Winkelman discloses an apparatus for performing the method of claim 15 (see winkelman figure 1).

With regard to claim 34, a computer-readable recording medium that stores a program which causes the computer to execute the steps of claims 1 and 14 is essential if the image processing method disclosed in Winkelman is to function. Therefore, a computer-readable recording medium is inherent in the Winkelman disclosure.

Conclusion

7.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final

action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick L Edwards whose telephone number is (571) 272-7390. The examiner can normally be reached on 8:30am - 5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick L Edwards   Art Unit 2621

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JOSEPH MANCUSO
SUPERVISORY PATENT EXAMINER